Intl - Union

Access DB# 107816

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Paul Roberts Examiner # : _____ Date: 11/5/03
Art Unit: 3731 Phone Number 30 5-7558 Serial Number: 09/473335
Mail Box and Bldg/Room Location: 2A08 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Composite tissue adhesive

Inventors (please provide full names): Soltz et al

Earliest Priority Filing Date: 10/4/01

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Claim 1. Need Collagen concentration 300mg/ml - 800mg/ml as an adhesive

****

STAFF USE ONLY

Searcher: John Sim
Searcher Phone #: 308-4836
Searcher Location: EIC 3700
Date Searcher Picked Up: _____
Date Completed: 11/10/03
Searcher Prep & Review Time: 60
Clerical Prep Time: _____
Online Time: 30

Type of Search

NA Sequence (#) _____
AA Sequence (#) _____
Structure (#) _____
Bibliographic _____
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

STN ✓
Dialog ✓
Questel/Orbit _____
Dr.Link _____
Lexis/Nexis _____
Sequence Systems _____
WWW/Internet _____
Other (specify) _____

PTO-1590 (8-01)

STIC Search Report
EIC 3700

STIC Database Tracking Number: 107816

TO: Paul Roberts **Location: cp2 2a08** **Art Unit: 3731** **Monday, November 10, 2003** **Case Serial Number: 09/973335**	**From: John Sims** **Location: EIC 3700** **CP2, 2C08** **Phone: 308-4836** **john.sims@uspto.gov**

Search Notes

Paul: I find some references to collagen at lower concentrations. Also a reference to "500-1500 ABC units" of collagenase; apparently ABC is a proprietary measurement of Advanced Biofactures Curacao, since I can't find any independent definition of an ABC unit.

STIC Search Results Feedback Form

EIC 3700

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact:***

John Sims, EIC 3700 Team Leader
308-4836, CP2-2C08

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 3730*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

  Types of relevant prior art found:
  - ☐ Foreign Patent(s)
  - ☐ Non-Patent Literature
    (journal articles, conference proceedings, new product announcements etc.)
- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC3700 CP2 2C08

18/9/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX

008989062 **Image available**
WPI Acc No: 1992-116330/199215
XRAM Acc No: C92-054131
XRPX Acc No: N92-086985
Use of collagenase for treatment of injured nerves - and adhesive **formulation contg.** collagenase **and fibrin for use in surgery**
Patent Assignee: ADVANCE BIOFACTURES CURACAO NV (ADBI-N)
Inventor: WEHLING P
Number of Countries: 007 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 479615	A	19920408				199215	B
US 5173295	A	19921222	US 90593778	A	19901005	199302	
US 5279825	A	19940118	US 90593778	A	19901005	199404	
			US 92941570	A	19920908		
EP 479615	B1	19950308	EP 91309137	A	19911004	199514	
DE 69107946	E	19950413	DE 607946	A	19911004	199520	
			EP 91309137	A	19911004		
ES 2069219	T3	19950501	EP 91309137	A	19911004	199524	

Priority Applications (No Type Date): US 90593778 A 19901005
Cited Patents: GB 1251398; US 4524065; US 4645668
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 479615	A		17		
Designated States (Regional): DE ES FR GB GR IT					
US 5173295	A		14	A61K-037/54	
US 5279825	A		14	A61K-037/54	Div ex application US 90593778
					Div ex patent US 5173295
EP 479615	B1	E	18	A61K-038/46	
Designated States (Regional): DE ES FR GB GR IT					
DE 69107946	E			A61K-038/46	Based on patent EP 479615
ES 2069219	T3			A61K-038/46	Based on patent EP 479615

Abstract (Basic): EP 479615 A
The following are claimed: (A) a method of enhancing the regeneration of injured nerves which comprises supplying collagenase to the zone of injury of the nerve during the regeneration process; (B) an adhesive formulation comprising fibrin or precursor as **adhesive** and **collagenase** to enhance regeneration and rejoining of a severed nerve when the formulation is used as adhesive for the nerve stumps; (C) a pharmaceutical kit for surgical use comprising fibrin **adhesive** or fibrin precursor and **collagenase** ; (D) use of collagenase for the mfr. of a medicament for enhancing the regeneration of injured nerves.
USE/ADVANTAGE - Collagenase enhances the nerve regeneration and it can be used with fibrin or a fibrin precursor as an adhesive to repair severed nerves where there is total severence of the nerve trunk or in injury resulting in neuroma in continuity where damage is caused by crushing, bruising or partial laceration of the nerve.
Dwg.1/6
Abstract (Equivalent): EP 479615 B
An adhesive formulation comprising fibrin or a fibrin precursor as **adhesive** and **collagenase** present in an amount and **concentration** effective to enhance regeneration and rejoining of a severed nerve when said formulation is used as adhesive for the stumps.
Dwg.0/6
Abstract (Equivalent): US 5173295 A

John Sims EIC 3700 308-4836

Enhancing the regeneration of injured nerves comprises admin. of collagenase to the injury zone during regeneration. Pref. it is applied in a pharmaceutically acceptable medium, esp. normal saline in an amt. of 200-2,500 esp. 500-1,000 ABC units of collagenase/ **ml** .

Where the nerve has been severed collagenase is pref. applied to the ends of the proximal and distal stumps. Fibrin contg. collagenase is pref. used as an adhesive for the stumps and the same mixt. used to coat them after suturing.

ADVANTAGE - Growth of nerve sprouts in the injury zone is aided by the presence of collagenase

Dwg.0/6

US 5279825 A

Adhesive formulation comprises fibrin **adhesive** and **collagenase** to enhance regeneration and rejoining of a severed nerve, the formulation being used as an adhesive for the stumps. Pref. 500 - 1500 ABC unitsof collagenase are present. USE - The compsn can be used when the stubs of severed nerves are to be reunited either directly or by interposition of a nerve graft.

Dwg.0/6

Title Terms: COLLAGENASE; TREAT; INJURY; NERVE; ADHESIVE; FORMULATION; CONTAIN; COLLAGENASE; FIBRIN; SURGICAL

Derwent Class: B04; D16; P34

International Patent Class (Main): A61K-037/54; A61K-038/46

International Patent Class (Additional): A61K-038/43; A61L-025/00

File Segment: CPI; EngPI

Manual Codes (CPI/A-N): B04-B02C3; B04-B04D2; B12-C10; D05-C03

Chemical Fragment Codes (M1):

01 M423 M431 M782 M903 P942 Q233 V600 V613

02 M423 M431 M782 M903 P942 Q233 V802 V814

?

John Sims EIC 3700 308-4836

15/3,KWIC/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0008170223 BIOSIS NO.: 199293013114
EFFECTS OF METHYLMERCURIC CHLORIDE ON COLLAGEN INDUCED PLATELET ADHESION AND AGGREGATION IN-VITRO
AUTHOR: KOSTKA B (Reprint); MIELICKI W
AUTHOR ADDRESS: DEP BIOCHEM, INST ENVIRONMENTAL RES AND BIOANALYSIS, MEDICAL ACAD, UL MUSZYNSKIEGO 1, 90 151 LODZ, POL**POLAND
JOURNAL: Journal of Trace Elements in Experimental Medicine 4 (3): p 149-156 1991
ISSN: 0896-548X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Methylmercuric chloride (MMC) enhances rat platelet **adhesiveness** to **collagen** fibers. Synergic effect between MMC and collagen in platelet aggregation induced by these activators was also observed. The **concentration** of **collagen** required to produce half-maximum aggregation (K') was determiend in vitro with the use of platelet-rich plasma obtained from pig blood. K' values for collagen decreased significantly in the presence of very low, nonaggregating concentrations of MMC (0.001-10 . **mu** .M). Such a result indicated that MMC can potentiate platelet responsiveness to collagen.

15/3,KWIC/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0005635888 BIOSIS NO.: 198783114779
STUDIES OF PLATELET ADHESIVENESS **TO** COLLAGEN **FIBERS I. FUNDAMENTAL STUDY OF A TECHNIQUE FOR MEASURING PLATELET** ADHESIVENESS **TO** COLLAGEN **FIBERS**
AUTHOR: MASE K (Reprint)
AUTHOR ADDRESS: DEP INTERN MED, KANSAI MED UNIV, MORIGUCHI, OSAKA, JAPAN** JAPAN
JOURNAL: Journal of the Kansai Medical University 38 (2): p145-159 1986
ISSN: 0022-8400
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: JAPANESE

STUDIES OF PLATELET ADHESIVENESS **TO** COLLAGEN **FIBERS I. FUNDAMENTAL STUDY OF A TECHNIQUE FOR MEASURING PLATELET** ADHESIVENESS **TO** COLLAGEN **FIBERS**

...ABSTRACT: GBC method), as other available methods using collagen and subendothelium are too complex for clinical use. We have studied a new method of measuring platelet **adhesiveness** to **collagen** fibers supported on sepharose (CS method). The results of fundamental studies on platelet adhesiveness using CS method were as follows: 1. With increasing **collagen concentration** , platelet **adhesiveness** increased. 2. Platelet adhesiveness was not change at a stirring speed of 150 to 15,00 rpm and at a stirring time of over one...

...change in the presence of above 0.5mM EDTA which inhibited platelet aggregation. 4. The influence of the platelet count at 10-40 .times.

104/. **mu** .1 on the platelet adhesiveness did not observed, but at above 60 .times. 104/. **mu** .1, platelet adhesiveness slightly decreased. 5. After storage for 72hr at room tempeature, platelet **adhesiveness** to **collagen** was slightly decreased and markedly decreased (below 50% of control values) after 7 days. 6. Platlets adhered normally to collagen fibers without extracellular von Willebrand...

...is simpler than other methods employing collagen and closer to in vivo conditions than the GBC method. These results suggested that the mechanism of platelet **adhesivness** to **collagen** fibers differ from that of adhesion to glass.

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John Sims EIC 3700 308-4836

Hilight option is not available in file(s) 252, 399
HILIGHT set on as ' '
? t s10/3,kwic
>>>KWIC option is not available in file(s): 252, 399

10/3,KWIC/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05758320 E.I. No: EIP01015485477
Title: Adhesion strength differential of human ligament fibroblasts to collagen types I and III
Author: Yang, Li; Tsai, Cliff M.-H.; Hsieh, Adam H.; Lin, Victor S.; Akeson, Wayne H.; Sung, K.-L. Paul
Corporate Source: Univ of California, San Diego, La Jolla, CA, USA
Source: Journal of Orthopaedic Research v 17 n 5 Sep 1999. p 755-762
Publication Year: 1999
CODEN: JOREDR ISSN: 0736-0266
Language: English

...Abstract: used to measure the force required to separate fibroblasts of the anterior cruciate and medial collateral ligaments from substrates composed of type I or III **collagen** , each at a **concentration** of 2 or 5 mu g/ **ml** . Approximately 1,200 fibroblasts from the anterior cruciate ligament and 1,600 from the medial collateral ligament were used, and the adhesion force and area...

...from the anterior cruciate ligament exhibited greater adhesion force than did those from the medial collateral ligament for all concentrations of types I and III **collagen** . In addition, the **adhesiveness** of fibroblasts from both ligaments was dependent on seeding time for all experimental conditions. To determine the adhesiveness per unit area, defined here as the...
? t s10/3,kwic/2
>>>KWIC option is not available in file(s): 252, 399

10/3,KWIC/2 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05743055 E.I. No: EIP00125458919
Title: New type of surgical adhesive **made from porcine** collagen **and polyglutamic acid**
Author: Sekine, Takashi; Nakamura, Tatsuo; Shimizu, Yasuhiko; Ueda, Hiroki; Matsumoto, Kazuya; Takimoto, Yukinobu; Kiyotani, Tetsuya
Corporate Source: Kyoto Univ, Kyoto, Jpn
Source: Journal of Biomedical Materials Research v 54 n 2 Feb 2001. p 305-310
Publication Year: 2001
CODEN: JBMRBG ISSN: 0021-9304
Language: English

Title: New type of surgical adhesive **made from porcine** collagen **and polyglutamic acid**
...Abstract: tensile strength and histological examination were performed 5, 7, 10, and 14 days after the operation. The tensile strength of wounds treated with 2.5 **mg / mL collagen glue** was not significantly different from that of wounds treated with fibrin glue except at 7 days after the operation (p less than 0.05 by Student's t-test). Histological examination revealed that the speed of cell infiltration into, and

absorption of 2.5 **mg / mL collagen glue** was slower than for fibrin glue, but faster than for 5.0 **mg / mL collagen glue** . One of the important advantages of our **collagen glue** is that the absorption rate of it can be controlled by the **collagen concentration** . Therefore, it seems to be adequate for sealing air leakage from the lung, which takes a relatively long period for recovery. Moreover it does not...
Descriptors: Biomaterials; **Adhesives** ; **Collagen** ; Polyesters; Tensile strength
? t s10/3,kwic/3-10
>>>KWIC option is not available in file(s): 252, 399

10/3,KWIC/3 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05963148 Genuine Article#: XK721 No. References: 39
Title: Recombinant human bone morphogenetic protein-2 promotes wound healing in rat periodontal fenestration defects
Author(s): King GN (REPRINT) ; King N; Cruchley AT; Wozney JM; Hughes FJ
Corporate Source: ST BARTHOLOMEWS & ROYAL LONDON SCH MED & DENT,FAC CLIN DENT, DEPT PERIODONTOL, TURNER ST/LONDON E1 AD//ENGLAND/ (REPRINT); ST BARTHOLOMEWS & ROYAL LONDON SCH MED & DENT,FAC CLIN DENT, DEPT ORAL PATHOL/LONDON E1 AD//ENGLAND/; GENET INST INC,/CAMBRIDGE//MA/02140
Journal: JOURNAL OF DENTAL RESEARCH, 1997, V76, N8 (AUG), P1460-1470
ISSN: 0022-0345 Publication date: 19970800
Publisher: AMER ASSOC DENTAL RESEARCH, 1619 DUKE ST, ALEXANDRIA, VA 22314
Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

...Abstract: in the mandibles of Wistar rats under general anesthesia. After the root surfaces were acid-conditioned, a 10-mu L quantity of 50 mu g/ **mL** rhBMP-2 in a **collagen** gel **sol**ution was placed into the surgically created defect in test animals; in controls, either a 10-mu L quantity of only collagen gel was received, or...

...or 38 days after surgery and the tissues processed for histological examination. Transverse 5-mu m sections were stained for the identification of new bone, **cementum** , and **collagen** fiber formation. In the 10-day study groups, new bone formation over the second molar and beyond the defect was significantly increased in the test...

10/3,KWIC/4 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

02665839 Genuine Article#: LU761 No. References: 35
Title: EFFECT OF FIBRIN SEALANT ON THE INTEGRITY OF COLONIC ANASTOMOSES IN RATS WITH FECAL PERITONITIS
Author(s): VANDERHAM AC; KORT WJ; WEIJMA IM; VANDENINGH HFGM; JEEKEL H
Corporate Source: ERASMUS UNIV ROTTERDAM,EXPTL SURG LAB/3000 DR ROTTERDAM//NETHERLANDS/; ST CLARA HOSP,DEPT PATHOL/ROTTERDAM//NETHERLANDS/
Journal: EUROPEAN JOURNAL OF SURGERY, 1993, V159, N8 (AUG), P425-432
ISSN: 1102-4151
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

...Abstract: single layer end-to-end anastomosis fashioned with 7/0 polypropylene. Faecal peritonitis was then induced in half of the rats by placement of 200 **mg** powdered autoclaved rat faeces in the peritoneal cavity near the anastomosis. Rats were allocated to one of

four groups (n = 30 in each): 1-control...

...additional sealing with fibrin glue; 3-peritonitis alone; and 4-peritonitis with fibrin glue.

Main outcome measures: Body weight, adhesion formation, anastomotic bursting pressure and **collagen concentration** around the anastomosis on days 2, 4, and 7 in 10 rats from each group.

Results: 11 rats died of peritonitis before the experiment was...

...days 4 and 7, and this was not prevented by fibrin. Sealing of anastomoses resulted in lower bursting pressures on day 4 in control animals. **Collagen concentration** was significantly reduced in peritonitis with or without fibrin sealant on days 4 and 7, and after fibrin sealing of control anastomoses.

Conclusion: Faecal peritonitis reduced mechanical strength and **collagen concentration** of colonic anastomoses, and this was not prevented by additional sealing of the anastomosis with fibrin sealant.
...Identifiers-- **COLLAGEN** -METABOLISM; ESCHERICHIA-COLI; TISSUE **ADHESIVES** ; RESECTION; EXPERIENCE; SURGERY; RECTUM; WOUNDS

10/3,KWIC/5 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0013667894 BIOSIS NO.: 200200261405
Expression of GPVI alone confers collagen signaling in RBL-2H3 cells but inactivation of both GPVI and alpha2beta1 is required to inhibit the collagen response of human platelets
AUTHOR: Chen Hong (Reprint); Locke Darren (Reprint); Liu Changdong (Reprint); Liu Ying (Reprint); Kahn Mark L (Reprint)
AUTHOR ADDRESS: Molecular Cardiology, University of Pennsylvania, Philadelphia, PA, USA**USA
JOURNAL: Blood 98 (11 Part 1): p786a-787a November 16, 2001 2001
MEDIUM: print
CONFERENCE/MEETING: 43rd Annual Meeting of the American Society of Hematology, Part 1 Orlando, Florida, USA December 07-11, 2001; 20011207
SPONSOR: American Society of Hematology
ISSN: 0006-4971
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: developed a monoclonal antibody, 11A12, which blocks calcium signaling in response to collagen but not the GPVI agonist convulxin in RBL-2H3 cells. 30 mug/ **ml** 11A12 had a small inhibitory effect on platelet aggregation induced by low (1 mu/ **ml**) but not high **concentrations** of **collagen** (10 and 30 mug/ **ml**). A similar small inhibitory effect was observed with the alpha2beta1-blocking antibody 6F1 used at the same concentration. Strikingly, a combination of 11A12 and 6F1 virtually ablated platelet aggregation in response to collagen (30 and 60 mug/ **ml**). Our results suggest that (1) GPVI is sufficient for both **adhesive** and signaling responses to **collagen** ; (2) GPVI-mediated collagen responses are receptor-density dependent; (3) inhibition of collagen stimulated aggregation of human platelets requires inhibition of both GPVI and alpha2beta1...

10/3,KWIC/6 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

12138457 EMBASE No: 2003249334
Adhesive **properties of hepatoma cells to** collagen **IV coated surfaces**
Zhao T.; Ling Z.-Q.; Yu W.-Q.; Long M.; Cai S.-X.
Dr. Z.Q. Ling, Zhejiang Academy of Medical Sciences, Hangzhou 310013 China
AUTHOR EMAIL: lingzq@hotmail.com
Hepatobiliary and Pancreatic Diseases International (HEPATOBILIARY PANCREATIC DIS. INT.) (China) 2002, 1/4 (565-569)
CODEN: HPDIA ISSN: 1499-3872
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 12

Adhesive **properties of hepatoma cells to** collagen **IV coated surfaces**

Objectives: To quantitatively study the **adhesive** properties of hepatoma cells to **collagen** IV coated artificial basement membrane and to investigate the relevance of cell **adhesive** forces to the **concentration** of **collagen** IV. Methods: Synchronous G1 and S phase cells were achieved using thymine-2-desoxyriboside and cochicine sequential blockage method and double thymine-2-desoxyriboside blockage...
...60 +/- 107.88) x 10SUP-10N, (298.91 +/- 144.13) x 10SUP-10N when the concentration of the membrane coated by 1, 2, 5 mug/ **ml** collagen IV respectively (P<0.001). The adhesive forces of G1 and S phases hepatoma cells to artificial basement membrane were (275.86 +/- 232.80) x 10SUP-10N and (161.16 +/- 120.40) x 10SUP-10N respectively when the concentration of the membrane coated by 5 mug/ **ml** collagen IV (P < 0.001). Conclusions: The adhesive forces of hepatoma cells to artifical basement membrane in direct proportion to the **concentration** of **collagen** IV suggests that the increase of basement membrane might be conducive to the chemotactic motion and adhesiveness of tumor cells. G1 phase cells are more...

10/3,KWIC/7 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

06347261 EMBASE No: 1996009363
Selective adhesion of hepatocytes on patterned surfaces
Bhatia S.N.; Toner M.; Tompkins R.G.; Yarmush M.L.
Shriners Burns Institute Res. Center, One Kendall Square,Cambridge, MA 02139 United States
Annals of the New York Academy of Sciences (ANN. NEW YORK ACAD. SCI.) (United States) 1994, 745/- (187-209)
CODEN: ANYAA ISSN: 0077-8923
DOCUMENT TYPE: Journal; Conference Paper
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...hepatocytes on a glass substrate with large regions of adhesive (AS) and nonadhesive (NAS) surfaces was obtained. The AS had hydrophilic characteristics, enhancing deposition of **collagen** molecules from an aqueous **solution** , and subsequent hepatocyte adhesion, whereas the NAS had hydrophobic properties and remained collagen-free and hepatocyte-free. In addition, a reproducible processing technique for obtaining...

...optimized, using a surface with a single AS band as a first approximation to a micropatterned device. This was achieved by spin-coating an aqueous **collagen** type I **solution** (0.1 **mg / mL**) on a banded surface at 500 rpm for 25 seconds. The morphology and long-term function of the hepatocytes attached to AS in nonbanded and...

...and limited to in vivo values. An optimal channel length of 0.6 cm and a flow rate of 2.0 x 10sup -sup 6 **mL** /s were obtained for a channel of 100 mum in width and 10 mum in height. These values were reasonable in terms of practical implementation.
DRUG DESCRIPTORS:
collagen ; **adhesive agent** ; glass

10/3,KWIC/8 (Item 1 from file: 149)

01797600 SUPPLIER NUMBER: 21195529 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Regulation of integrin-mediated adhesion by muscarinic acetylcholine receptors and protein kinase C in small cell lung carcinoma.
Quigley, Robert L.; Shafer, Shulamith H.; Williams, Carol L.
Chest, v114, n3, p839(8)
Sept,
1998
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 0012-3692
LANGUAGE: English RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 4711 LINE COUNT: 00397

... American Type Culture Collection; Beltsville, Md). Both cell lines were cultured in RPMI-1640 medium, 10% heat inactivated calf bovine serum (CBS), glutamine (0.3 **mg / mL**), penicillin (20 U/ **mL**), and streptomycin sulfate (20 (micro)g/ **mL**). Cells were maintained at 37 (degrees) C in a humidified atmosphere of 5% (CO.sub.2)/95% air at densities that promoted exponential proliferation.

Coating of Microtiter Plates With ECM Proteins

Wells of microtiter plates were coated with poly-L-lysine (30 (micro)g/ **mL** phosphate-buffered saline solution (PBS)) or BSA (30 (micro)g/ **mL** PBS) by adding 100 (micro)L of the protein solutions to each well. After incubation for 3 h at 25 (degrees) C, the wells were...

...three times with PBS (200 (micro)L per well) and allowed to air dry. Microtiter wells were coated with collagen type I (100 (micro)g/ **mL**), collagen type IV (100 (micro)g/ **mL** PBS), laminin (30 (micro)g/ **mL**), vitronectin (30 (micro)g/ **mL**), or fibronectin (30 (micro)g/ **mL**) by adding 20 (micro)L of the protein solutions to each well. After incubation for 3 h at 25 (degrees) C, the wells were washed...SCC-9 cells.

The ability of mAChR to regulate integrin activity was further characterized by examining the carbachol-mediated adhesion of SCC-9 cells to **collagen** type IV. **Concentrations** of carbachol that stimulate adhesion of SCC-9 cells to collagen type IV (Fig 2) are similar to the concentrations of carbachol that inhibit cell...

...antibody (Fig 6, right (C)). However, inhibiting cell-cell adhesion with the HECD antibody diminishes the size of the SCC-9 cell aggregates adhering to collagen type IV, resulting in an **adhesive** response that more closely resembles the response of NCI-H345 cells (Fig 6).

DISCUSSION

This study demonstrates that PKC or mAChR activation increases integrin-mediated adhesion of SCLC cells. Activation of mAChR increases the

adhesion of SCC-9 cells to **collagen** type IV. This **adhesive** event is mediated by ((Beta).sub.1)-integrins, because it is abrogated by the AIIB2 antibody that blocks ((Beta).sub.1)-integrin function. Our results...X, et al. Mechanisms of 131 integrin-dependent adherence of granulocytic HL60 to fibronectin. J Leukoc Biol 1995; 57:592-99

(23) Kucik DF, Sustin **ML** , Miller JM, et al. Adhesion-activating phorbol ester increases the mobility of leukocyte integrin LFA-1 in cultured lymphocytes. J Clin Invest 1996; 97: 2139...

10/3,KWIC/9 (Item 2 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01309414 SUPPLIER NUMBER: 11628438 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Collagen shields.
Mondino, Bartly J.
American Journal of Ophthalmology, v112, n5, p587(4)
Nov 15,
1991
PUBLICATION FORMAT: Magazine/Journal ISSN: 0002-9394 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract TARGET AUDIENCE: Professional
WORD COUNT: 1785 LINE COUNT: 00181

... 9, 1990) concerned patients who developed corneal epithelial loss and edema after the application of a collagen shield previously impregnated with both Solu-Medrol (40 **mg / ml** of methylprednisolone sodium succinate for injection) and gentamicin sulfate (40 **mg / ml** of gentamicin sulfate injection). Mixing of the two drugs produced an aggregate, but it was unclear whether the aggregate damaged the cornea by causing chemical...to treat a glaucoma filter bleb leak. Am. J. Ophthalmol. 107.673, 1989.

[11] Weber, P. A., and Baker, N. D.: The use of cyanoacrylate **adhesive** with a **collagen** shield in leaking filtering blebs. Ophthalmic Surg. 20:284, 1989.

[12] Pollard, D. E., and Kaufman, H. E.: Clinical uses of collagen shields. J. Cataract...

...Arch. Ophthalmol. 106:1605, 1988.

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File 252:Packaging Sci&Tech 1982-1997/Oct
(c) 1997 by Fraunhofer-ILV, Germany
File 315:ChemEng & Biotec Abs 1970-2003/Oct
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2003 (c) Action Potential
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File 198:Health Devices Alerts(R) 1977-2003/Nov W2
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File 441:ESPICOM Pharm&Med DEVICE NEWS 2003/Nov W1

John Sims EIC 3700 308-4836

16/3,KWIC/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10406782 96212792 PMID: 8963722
Lipoprotein(a) inhibits collagen-induced aggregation of thrombocytes.
Gries A; Gries M; Wurm H; Kenner T; Ijsseldijk M; Sixma J J; Kostner G M
Institute of Physiology, Graz, Austria.
Arteriosclerosis, thrombosis, and vascular biology (UNITED STATES) May 1996, 16 (5) p648-55, ISSN 1079-5642 Journal Code: 9505803
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Lipoprotein(a) [Lp(a)] is known to interact with human platelets in vitro. In the present study the effect of physiological **concentrations** of Lp(a) on platelet aggregation was studied. Freshly prepared gel-filtered platelets from healthy donors were incubated for 30 minutes at 37 degrees C with various **concentrations** of Lp(a); aggregation was triggered with ADP, thrombin, and collagen. Control incubations were performed with Tyrode's solution or LDL. Thrombin- and ADP-triggered...

... were only slightly influenced by Lp(a), but aggregation of platelets stimulated with collagen (4 micrograms/mL) was markedly inhibited. Measurable effects occurred at low **concentrations** (0.05 **mg / mL**) of total Lp(a); at 0.5 **mg / mL** , maximum aggregation of platelets was inhibited by 54 +/- 20%, and the aggregation rate was attenuated by 47 +/- 19% compared with platelets incubated with Tyrode's...

... a) yielded similar results. The effect of Lp(a) on platelet aggregation was accompanied by a significant reduction of serotonin release and TXA2 formation. Higher **concentrations** of collagen (> or = 10 micrograms/ mL) caused the inhibitory effect on Lp(a) on collagen-induced aggregation to disappear. In contrast, incubation of platelets with 5 **mg / mL** LDL led to a significant increase of aggregation rate, maximum aggregation, serotonin release, and formation of TXA2 when aggregation was induced with 4 micrograms/mL...

... an adhesion assay using fresh whole blood, which mimics the in vitro situation of vessel injury. Lp(a) reduced platelet adhesion at shear rates of **300** and 1600/s by 22.6% and 11.6%, respectively. In addition, Lp(a) reduced the size of platelet aggregates significantly (up to 63%); this...
Descriptors: **Collagen** --pharmacology--PD; *Lipoprotein(a)--pharmacology --PD; *Platelet **Adhesiveness** --drug effects--DE
? ds

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? ds

Set      Items   Description
S1       14412   COLLAGEN?
S2      871749   ADHESIV? OR BONDING? OR GLUE? OR CEMENT?
S3        1261   S1 AND S2
S4      418487   CONCENTRAT?
S5         138   S3 AND S4
S6      227011   MG OR MILLIGRAM?
S7          38   S5 AND S6
S8         424   MILLILITER OR MILLILITRE
S9      146041   ML
S10     146348   S8 OR S9
S11         56   S5 AND S10
S12         66   S7 OR S11
S13     635053   300 OR 400 OR 500 OR 600 OR 700 OR 800
S14     635094   S12 OR S13
S15         25   S12 AND S13
S16        236   S1(4N)S2
S17         16   S4 AND S16
S18         10   S17 AND (S6 OR S10)
? show files
File 347:JAPIO Oct 1976-2003/Jun(Updated 031006)
         (c) 2003 JPO & JAPIO
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200372
         (c) 2003  Thomson Derwent
File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.
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? ds

Set     Items   Description
S1     663968   COLLAGEN?
S2    1110579   ADHESIV? OR GLUE? OR BONDING()AGENT? OR CEMENT?
S3       3527   S1(5N)S2
S4   11989116   CONCENTRATION? OR SOLUTION? OR SOLN
S5      14808   S4(4N)S1
S6         94   S3 AND S5
S7         53   RD (unique items)
S8    3134167   MG OR MILLIGRAM?
S9    1742138   ML OR MILLILITER OR MILLILITRE OR MILLI()(LITRE OR LITER)
S10         9   S7 AND (S8 OR S9)
S11   2415987   MU OR MUG
S12   1837125   S11 NOT (S8 OR S9)
S13         2   S7 AND S12
S14         2   S13 NOT S10
S15         2   RD (unique items)
? show files
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         (c) 2003 Institution of Electrical Engineers
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         (c) 2003 NTIS, Intl Cpyrght All Rights Res
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File  34:SciSearch(R) Cited Ref Sci 1990-2003/Nov W1
         (c) 2003 Inst for Sci Info
File  35:Dissertation Abs Online 1861-2003/Oct
         (c) 2003 ProQuest Info&Learning
File  63:Transport Res(TRIS) 1970-2003/Oct
         (c) fmt only 2003 Dialog Corp.
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         (c) 2003 BLDSC all rts. reserv.
File  67:World Textiles 1968-2003/Oct
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         (c) 2003 Contains copyrighted material
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File 248:PIRA 1975-2003/Nov W1
         (c) 2003 Pira International
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Set     Items   Description
S1      83299   COLLAGEN?(S)(ADHESI? OR GLUE? OR ADHERE? OR BOND? OR CEMEN-
             T? OR CONGLUTIN? OR AGGLUTIN? OR BIND? OR HOLD?)
S2     128606   MG(1N)ML
S3    7728829   CONCENTRAT?
S4        314   S1(S)S2(S)S3
S5        121   RD (unique items)
S6    3456196   300 OR 400 OR 500 OR 600 OR 700 OR 800
S7       4864   S6(3N)S2
S8          2   S5 AND S7
S9          2   RD (unique items)
S10    314635   ADHESIV?/DE
S11    361173   COLLAGEN?/DE
S12      2677   S10 AND S11
S13       334   S3 AND S12
S14        45   S6 AND S13
S15        40   RD (unique items)
S16         1   S2 AND S15
? show files
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File  99:Wilson Appl. Sci & Tech Abs 1983-2003/Sep
         (c) 2003 The HW Wilson Co.
File 103:Energy SciTec 1974-2003/Oct B2
         (c) 2003 Contains copyrighted material
File 105:AESIS 1851-2001/Jul
         (c) 2001 Australian Mineral Foundation Inc
File 118:ICONDA-Intl Construction 1976-2003/Oct
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File 119:Textile Technol.Dig. 1978-2003/Jun
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File 144:Pascal 1973-2003/Nov W1
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File 370:Science 1996-1999/Jul W3
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File 399:CA SEARCH(R) 1967-2003/UD=13920
(c) 2003 American Chemical Society
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 1998 Inst for Sci Info
File 5:Biosis Previews(R) 1969-2003/Nov W1
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File 48:SPORTDiscus 1962-2003/Oct
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PRoberts

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     (FILE 'HOME' ENTERED AT 13:54:46 ON 10 NOV 2003)

     FILE 'HCAPLUS' ENTERED AT 13:54:58 ON 10 NOV 2003

     FILE 'HCAPLUS, RUSSCI' ENTERED AT 13:55:14 ON 10 NOV 2003
L1         89850 S COLLAGEN?
L2        367638 S ADHESIV? OR GLUE? OR BONDING()AGENT? OR CEMENT?
L3       2461182 S CONCENTRAT? OR SOLUTION? OR SOLN
L4           585 S L1(5N)L2
L5          1796 S L1(4N)L3
L6            24 S L4 AND L5
L7            23 S L6 AND PY<2002

     FILE 'CONFSCI' ENTERED AT 14:03:31 ON 10 NOV 2003
L8          3051 S COLLAGEN?
L9          4886 S ADHESIV? OR GLUE? OR BONDING OR CEMENT?
L10           11 S L8 AND L9
L11        25074 S CONCENTRAT? OR SOLUTION? OR SOLN?
L12            0 S L10 AND L11
L13           11 S L10

     FILE 'EMA' ENTERED AT 14:08:56 ON 10 NOV 2003
L14          296 S COLLAGEN?
L15        17382 S ADHESIV? OR GLUE? OR BONDING? OR CEMENT?
L16           65 S L14 AND L15
L17        35450 S CONCENTRAT? OR SOLN? OR SOLUTION?
L18           11 S L16 AND L17
L19         1954 S MG OR MILLIGRAM? OR MILLI()GRAM?
L20            1 S L18 AND L19
L21          452 S ML OR MILLILITER OR MILLILITRE OR MILLI()(LITER OR LITRE)
L22            0 S L18 AND L21
L23           10 S L18 NOT L20

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John Sims EIC 3700 308-4836

PRoberts

ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:721611 HCAPLUS
DOCUMENT NUMBER: 135:243293
TITLE: Adhesive composition based on natural and synthetic polymers and process for preparing the same
INVENTOR(S): Bucevschi, Mircea Dan; Caloianu, Maria; Colt, Monica; Iordachel, Radu; Iordachel, Catalin
PATENT ASSIGNEE(S): Institutul National de Cercetare - Dezvoltare pentru Stiinte Biologice, Bucuresti, Rom.
SOURCE: Rom., 4 pp.
CODEN: RUXXA3
DOCUMENT TYPE: Patent
LANGUAGE: Romanian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RO 116293	B1	20001229	RO 1997-727	19970415 <--

PRIORITY APPLN. INFO.: RO 1997-727 19970415
AB Transparent adhesives for pharmaceutical products and food packaging contain 80-120 volume parts 5-10% aqueous **soln.** benzoylated **collagen** with average mol. weight 40,000-80,000 and benzoyl group content 2-9%, 0.5-1.5 volume parts starch, 0.25-0.75 volume parts polyvinyl alc. (Kw 120, hydrolysis degree 70-90%), 10-20 volume parts acrolein-styrene copolymer (d.p. 200-600), 1-3 volume parts sulfated castor oil, 0.05-0.1 volume part thymol, and 1-5 volume parts 10% aqueous NaOH.

=> d l7 ibib abs 2-23

L7 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:423419 HCAPLUS
DOCUMENT NUMBER: 135:37219
TITLE: Polymerization catalysts showing high activity at room temperature in the presence of water and dental polymerizable compositions containing them
INVENTOR(S): Kimura, Mikio; Aisawa, Masayuki
PATENT ASSIGNEE(S): Tokuyama Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001158804	A2	20010612	JP 1999-363883	19991222 <--

PRIORITY APPLN. INFO.: JP 1999-270171 A 19990924
AB Title compns., useful as dental adhesives, contain (meth)acrylate-type monomers and the catalysts comprising redox polymerization catalysts, azo compds., and optionally transition metal compds. Pretreated **collagen** and a **soln.** containing Me methacrylate, benzoyl peroxide, dimethyl-p-toluidine, and 2,2'-azobis(2,4-dimethylvaleronitrile) were kept at 37° and relative humidity 100% for 1 h to give a polymer with Mn 17,000, Mw 210,000, and graft ratio 16.3%.

L7 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN

PRoberts

ACCESSION NUMBER: 2000:754415 HCAPLUS
DOCUMENT NUMBER: 133:325698
TITLE: **Collagen** containing tissue **adhesive**
INVENTOR(S): Petito, George D.
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 5 pp., Cont.-in-part of U.S. Ser. No. 32,031, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6136341	A	20001024	US 1999-417911	19991013 <--

PRIORITY APPLN. INFO.: US 1998-32031 B2 19980227

AB A tissue adhesive compound may be a powder, gel, paste or film. The main ingredient is hydrolyzed Type I collagen having a mol. weight between 1000 and 10,000. The collagen is preferably derived from a bovine source, especially calves under one year of age. The gel form preferably includes 60% hydrolyzed Type I collagen, and has anti-microbial properties not found in the powder form. In any form, the compound is administered to the cleaned wound site where it absorbs exudate, provides phys. barrier to bacterial infestation, reduces pain and expedites wound healing. Removal of any compound remaining is unnecessary in subsequent dressing changes.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:475567 HCAPLUS
DOCUMENT NUMBER: 133:94612
TITLE: Tissue adhesive for treating vigorously bleeding surfaces comprising collagen and albumin
INVENTOR(S): Browdie, David A.
PATENT ASSIGNEE(S): USA
SOURCE: PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000040277	A1	20000713	WO 1999-US504	19990108 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2358567	AA	20000713	CA 1999-2358567	19990108 <--
AU 9923147	A1	20000724	AU 1999-23147	19990108 <--
EP 1140233	A1	20011010	EP 1999-903029	19990108 <--

PRoberts

R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE, IE, FI
PRIORITY APPLN. INFO.: WO 1999-US504 A 19990108
AB Disclosed is a novel tissue adhesive technol. comprising a combination of ultrasonically treated proteins including collagen and albumin which form a viscous material that develops adhesive properties when chemical crosslinked. A novel new crosslinking agent with surprisingly stable properties was developed in association with the tissue adhesive described and claimed herein and is considered to be within the scope of the present invention. This new crosslinking agent is a product of reaction glutaraldehyde with amino acids or peptides and allowing the reacting to proceed to completion. This chemical crosslinking is mixed with the ultrasonically treated proteins, allowed to react for a predetd. time, then used to seal large surface areas of vigorously bleeding tissues including, but not limited to, the liver, lungs and major vascular systems in patients with and without bleeding disorders. This same tissue adhesive has proven to work well in sealing suture sites to prevent leakage. Four to eight parts of **collagen**/albumin **soln** . was mixed with one part of glutaraldehyde solution and 0.01% methylene blue to make the tissue adhesive of the invention. Efficacy of the tissue adhesive was shown in vivo.
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:630306 HCAPLUS
DOCUMENT NUMBER: 131:248293
TITLE: Method for making mineralized collagen fibrils and their use as bone replacement material
INVENTOR(S): Weis, Karl; Pompe, Wolfgang; Bradt, Jens
PATENT ASSIGNEE(S): Merck Patent G.m.b.H., Germany
SOURCE: Eur. Pat. Appl., 4 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
EP 945147	A2	19990929	EP 1999-105435	19990317	<--
EP 945147	A3	20000503			
EP 945147	B1	20030827			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
DE 19812713	A1	19990930	DE 1998-19812713	19980324	<--
AT 247993	E	20030915	AT 1999-105435	19990317	
JP 11313882	A2	19991116	JP 1999-77490	19990323	<--
US 6384196	B1	20020507	US 1999-275397	19990324	

PRIORITY APPLN. INFO.: DE 1998-19812713 A 19980324
AB Mineralized collagen fibrils are produced in a single step by mixing an acidic **soln**. of soluble recombinant **collagen** with a neutral buffer **soln**. while adding a Ca solution and a phosphate solution to produce a supersatd. Ca phosphate solution under controlled conditions such that fibril formation begins before mineralization but is limited to the extent that Ca and phosphate ions can diffuse into the collagen fibrils. The mineralized fibrils are then used in preparation of a composite Ca phosphate cement containing embedded fibrils for use as a bone substitute. Thus, 700 μL of a **soln**. of soluble type I **collagen** (1 mg/mL) in 10 mM HCl was mixed with 126 μL 0.1M aqueous

CaCl2 soln. at 4° (component 1). Component 2 comprised a mixt. of 165 μL 2M aq. NaCl soln., 240 μL 0.5M aq. Tris buffer (pH 7.4), 32.4 μL 0.5M aq. KH2PO4/K2HPO4 soln. (pH 7.4), and 793 μL H2O at 4°. Component 2 (574 μL) was added to component 1 and the temp. was rapidly raised to 30° to initiate fibril formation and mineralization. The amorphous Ca phosphate phase which formed initially was converted over the next 90 min to cryst. defect apatite which was deposited on the fibrils. The product, which had the consistency of a gel, was washed in distd. water to remove buffering salts and freeze-dried. These mineralized fibrils (5 mg) were combined with 500 mg Ca(H2PO4)2/CaCO3 mixt. and 230 mL phosphate buffer to form a plastic cement mass which subsequently hardened.

L7 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:630305 HCAPLUS
DOCUMENT NUMBER: 131:248292
TITLE: Method for making mineralized collagen fibrils and their use as bone replacement material
INVENTOR(S): Weis, Karl; Pompe, Wolfgang; Bradt, Jens
PATENT ASSIGNEE(S): Merck Patent G.m.b.H., Germany
SOURCE: Eur. Pat. Appl., 4 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
EP 945146	A2	19990929	EP 1999-105434	19990317	<--
EP 945146	A3	20000426			
EP 945146	B1	20030514			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
DE 19812714	A1	19990930	DE 1998-19812714	19980324	<--
AT 240128	E	20030515	AT 1999-105434	19990317	
JP 11313883	A2	19991116	JP 1999-77494	19990323	<--
US 6384197	B1	20020507	US 1999-275398	19990324	

PRIORITY APPLN. INFO.: DE 1998-19812714 A 19980324

AB Mineralized collagen fibrils are produced in a single step by mixing an acidic **soln.** of soluble recombinant **collagen** with a neutral buffer **soln.** while adding a Ca solution and a phosphate solution to produce a supersatd. Ca phosphate solution under controlled conditions such that fibril formation begins before mineralization but is limited to the extent that Ca and phosphate ions can diffuse into the collagen fibrils. The mineralized fibrils are then used in preparation of a composite Ca phosphate cement containing embedded fibrils for use as a bone substitute. Thus, 700 μL of a **soln.** of soluble type I **collagen** (1 mg/mL) in 10 mM HCl was mixed with 126 μL 0.1M aqueous CaCl2 soln. at 4° (component 1). Component 2 comprised a mixt. of 165 μL 2M aq. NaCl soln., 240 μL 0.5M aq. Tris buffer (pH 7.4), 32.4 μL 0.5M aq. KH2PO4/K2HPO4 soln. (pH 7.4), 37.5 μL aq. Na poly-L-aspartate soln. (4 mg/mL), and 755 μL H2O at 4°. Component 2 (574 μL) was added to component 1 and the temp. was rapidly raised to 30° to initiate fibril formation and mineralization. The amorphous Ca phosphate phase which formed initially was converted over the next 8 h to cryst. defect apatite which was deposited on the fibrils. The product, which had the consistency of a gel, was washed in distd. water to remove buffering salts and freeze-dried. These mineralized fibrils (288

mg) were combined with 1 g Ca(H2PO4)2/CaCO3 mixt. and stirred with water to form a plastic cement mass which subsequently hardened.

L7 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:510503 HCAPLUS
DOCUMENT NUMBER: 131:175034
TITLE: Pore and structure formation in collagen-hydroxyapatite precursors. Experiment-model
AUTHOR(S): Lampenscherf, S.; Weis, K.; Pompe, W.
CORPORATE SOURCE: Department Materials Science, Technical Univ. Dresden, Dresden, D-01069, Germany
SOURCE: Materials Science Forum (**1999**), 308-311(Functionally Graded Materials 1998), 362-367
CODEN: MSFOEP; ISSN: 0255-5476
PUBLISHER: Trans Tech Publications Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The formation was studied of collagen/hydroxyapatite (HAP)-composites with graded porosity. Pore growth was shown during phase separation of an aqueous **collagen soln.** The influence was investigated of different mech. boundary conditions (freestanding body, film on rigid substrate). The formation is presented of a graded pore structure via phase separation together with the synthesis of a **collagen** /HAP-composite via a **cementation** reaction from a colloidal HAP-precursor. The modeling part focuses on the drying process as a route for graded densification and structure formation. The model is described for stress formation and plastic deformation in a 2-phase material containing a liquid and a solid phase. Important processing and material parameters are outlined for structural design and usage of the model to find the optimum processing conditions for a desired graded structure.
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:548569 HCAPLUS
DOCUMENT NUMBER: 129:180187
TITLE: Collagenic material useful in particular for preventing post-operative adhesions
INVENTOR(S): Tayot, Jean-Louis; Tardy, Michel; Gravagna, Philippe
PATENT ASSIGNEE(S): Societe Anonyme De Developpement Des Utilisations, Fr.
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9834656	A1	19980813	WO 1998-FR214	19980205 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
FR 2759083	A1	19980807	FR 1997-1373	19970206 <--

PRoberts

FR 2759083	B1	19990430			
FR 2759084	A1	19980807	FR 1997-11589	19970917	<--
FR 2759084	B1	19991029			
AU 9862984	A1	19980826	AU 1998-62984	19980205	<--
EP 964709	A1	19991222	EP 1998-906979	19980205	<--
EP 964709	B1	20020502			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, LI, FI					
JP 2000509632	T2	20000802	JP 1998-533876	19980205	<--
JP 3231793	B2	20011126			
AT 216897	E	20020515	AT 1998-906979	19980205	
ES 2174419	T3	20021101	ES 1998-906979	19980205	
US 2001008930	A1	20010719	US 1999-355842	19990805	<--
US 6391939	B2	20020521			

PRIORITY APPLN. INFO.:	FR 1997-1373	A	19970206
	FR 1997-11589	A	19970917
	WO 1998-FR214	W	19980205

AB A non-toxic, biol. compatible collagenic material, biodegradable in less than a month, preferably in less than a week, comprising collagen and at least a macromol. hydrophilic additive, chemical non-reactive with collagen, said collagen having at least lost its helicoid structure and being cross-linked. The invention also concerns a method for obtaining such a material. The collagenic material is particularly useful for the prevention of post-operative adhesions. A **soln.** of **collagen** oxidized by periodic acid in acetone was sterile filtered at 40°. The solution was mixed with PEG-6000 and glycerin and the volume was adjusted to obtain a concn.of 2.7% collagen, 9.0% PEG-6000, and 0.54% glycerin. The mixture was poured on a PVC surface at 0.133 g/cm2 and left under stream of sterile air for 18 h to evaporate the solvents. The film thus obtained had post-operation antiadherence properties in rats.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:535467 HCAPLUS
DOCUMENT NUMBER: 129:153285
TITLE: Medical hardenable compositions containing collagens and their manufacture
INVENTOR(S): Ishikawa, Kunio
PATENT ASSIGNEE(S): Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
JP 10216219	A2	19980818	JP 1997-33221	19970131	<--

PRIORITY APPLN. INFO.: JP 1997-33221 19970131

AB The compns., useful for restoring defects and filling cavities of bone and tooth, and stopping bleeding from lesions in such hard tissues, contain phosphate components and Ca components, collagens or their derivs., and water-soluble phosphate salts in the powder and/or liquid The whole of these components are dissolved in a liquid to show PO-4 concentration ≥50 mmol. The compns. provide cement which show good mech. strength, moisture-resistance, biocompatibility, and affinity to bone. A 1:1 mixture of anhydrous CaHPO4 and tetracalcium phosphate as kneaded with an aqueous neutral

sodium hydrogen phosphate **soln**. containing **collagen** to give a **cement**, which was soaked in H2O to show no decay.

L7 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:514151 HCAPLUS
DOCUMENT NUMBER: 127:145602
TITLE: Recombinant human bone morphogenetic protein-2 promotes wound healing in rat periodontal fenestration defects
AUTHOR(S): King, G.N.; King, N.; Cruchley, A.T.; Wozney, J.M.; Hughes, F.J.
CORPORATE SOURCE: Department of Periodontology, St Bartholomew's & The Royal London School of Medicine & Dentistry, Faculty of Clinical Dentistry, London, E1 AD, UK
SOURCE: Journal of Dental Research (**1997**), 76(8), 1460-1470
CODEN: JDREAF; ISSN: 0022-0345
PUBLISHER: International Association for Dental Research
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Although there is considerable interest in the use of bone morphogenetic protein (BMP) to promote periodontal regeneration, little is known of its effects on the early stages of wound healing. The aim of this study was to investigate the effects of recombinant human bone morphogenetic protein 2 (rhBMP-2) on an early stage of post-operative wound healing and following complete healing (10 and 38 days, resp.) in a rat model of periodontal regeneration. The buccal aspects of molar roots were carefully denuded of their periodontal ligament through a bony window created in the mandibles of Wistar rats under general anesthesia. After the root surfaces were acid-conditioned, a 10-μL quantity of 50 μg/mL rhBMP-2 in a **collagen** gel **soln**. was placed into the surgically created defect in test animals; in controls, either a 10-μL quantity of only collagen gel was received, or the defect was untreated. Animals were killed 10 days or 38 days after surgery and the tissues processed for histol. examination Transverse 5-μm sections were stained for the identification of new bone, **cementum**, and **collagen** fiber formation. In the 10-day study groups, new bone formation over the second molar and beyond the defect was significantly increased in the test group, although there was no evidence of increased ankylosis. RhBMP-2 stimulated more than twice the area of cementum growth coronally compared with controls (712 μM2 and 258 μM2, resp.). Connective tissue attachment, including the number and width of collagen bundles, was similar in both test and controls. Complete healing without any evidence of ankylosis had occurred in all animals 38 days post-operatively, and no significant differences were observed between test and control groups. In conclusion, a single dose of rhBMP-2 increased the rate of normal intramembranous bone formation and selectively enhanced cementum formation coronally during early wound healing. However, the finding that rhBMP-2 induced bone formation at some distance from the defect suggests the importance of developing a suitable delivery system to maintain the concentration of BMP-2 at the site of implantation for potential therapeutic use.

L7 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1996:90184 HCAPLUS
DOCUMENT NUMBER: 124:211912
TITLE: Fibrin-**collagen** composite tissue **adhesive**
AUTHOR(S): Sierra, David H.

PRoberts

CORPORATE SOURCE: Cohesion Corp., Palo Alto, CA, USA
SOURCE: Surgical Adhesives and Sealants (**1996**), 29-39. Editor(s): Sierra, David H.; Saltz, Renato. Technomic: Lancaster, Pa.
CODEN: 62KIAS
DOCUMENT TYPE: Conference
LANGUAGE: English

AB The fibrin-based tissue adhesive composition was formulated by adding fibrillar type I **collagen** to fibrin-factor XIII **soln**. It appears that addition of collagen to a fibrin sealant alter the sealant's biol., biochem. and mech. properties. The addition of collagen or antifibrinolytic (thrombin) to fibrin sealant did not decrease the onset of degradation However, the addition of both collagen and antifibrinolytic (thrombin) significantly decreased the onset of degradation in a synergistic manner.

L7 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:761801 HCAPLUS
DOCUMENT NUMBER: 123:152998
TITLE: Adhesive composition for surgical use based on non-crosslinked collagen modified by oxidative degradation
INVENTOR(S): Tardy, Michel; Tiollier, Jerome; Tayot, Jean-louis
PATENT ASSIGNEE(S): Imedex, Fr.
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
EP 664132	A1	19950726	EP 1995-400093	19950118	<--
EP 664132	B1	20000705			
FR 2715309	A1	19950728	FR 1994-715	19940124	<--
FR 2715309	B1	19960802			
AT 194295	E	20000715	AT 1995-400093	19950118	<--
ES 2149932	T3	20001116	ES 1995-400093	19950118	<--
US 5618551	A	19970408	US 1995-376185	19950120	<--
CA 2140835	AA	19950725	CA 1995-2140835	19950123	<--
CA 2140835	C	20011120			
BR 9500284	A	19951017	BR 1995-284	19950123	<--
AU 9511334	A1	19950803	AU 1995-11334	19950124	<--
AU 692496	B2	19980611			
JP 08033700	A2	19960206	JP 1995-27455	19950124	<--

PRIORITY APPLN. INFO.: FR 1994-715 A 19940124

AB A biocompatible, bioresorbable and non-toxic composition for tissue adhesion comprises a solution of 5-30% non-crosslinked collagen or gelatin modified by oxidative degradation Bovine collagen 20 g was dissolved in 20 L 0.012N HCl at 4-8° for 8 h, then it was sterile filtered. A solution of 240 g/L NaCl (4.1 L) was added to above **collagen soln**. and stirred and left for ≥8 h, then it was centrifuged for 15 at 8000 rpm for 15 min. The precipitate was separated and dissolved in 0.012N HCl at a concentration of 0.5% and stirred for ≥8 h at 4-8° followed by addition of 80 mL sterile 0.4M periodic acid at 20° and 0.8 L sterile NaCl (240g/L), then centrifuged at 20° for 15 min at 8500 rpm. The precipitate was separated, washed with NaCl solution and acetone and kept at -80°. Thus, 275 μL of a solution of 0.41M Na2CO3 (1 g) was added

to a 15% **soln**. of above **collagen** in water at 42° and mixed for 15 s. After 2.5 min a solid gel was formed.

L7 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:748898 HCAPLUS
DOCUMENT NUMBER: 123:116202
TITLE: Process for concentrating biocolloids
INVENTOR(S): Bian, Baigui; Qiu, Shouchang; Wang, Yanru
PATENT ASSIGNEE(S): Nanjing College of Chemical Engineering, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 4 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1098127	A	19950201	CN 1993-111589	19930726 <--

PRIORITY APPLN. INFO.: CN 1993-111589 19930726
AB The title process consists of treating biocolloid solution (e.g., 0.1-10% **soln**. of **collagens**, **glues**, gelatins, seaweed **glues**, pectin) with a semipermeable membrane (e.g., of plastics, inorg.) to give a 15-50% concentration

L7 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1993:634131 HCAPLUS
DOCUMENT NUMBER: 119:234131
TITLE: Medical **adhesives** containing fibrinogens and **collagens**
INVENTOR(S): Iwatsuki, Makoto; Hayashi, Toshiro
PATENT ASSIGNEE(S): Ajinomoto Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05208042	A2	19930820	JP 1992-15139	19920130 <--

PRIORITY APPLN. INFO.: JP 1992-15139 19920130
AB A mixture of human fibrinogens and **collagens** is used as **adhesive** for skin and during surgery. For example, a fibrinogen **soln**. and a **collagen soln**. were mixed and applied on a **collagen** membrane, then a CaCl2 **soln**. was applied for gelation and its adhesion strength was determined

L7 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1993:109819 HCAPLUS
DOCUMENT NUMBER: 118:109819
TITLE: Surgical tissue adhesives
INVENTOR(S): Tamada, Yasushi; Yasuda, Kenji
PATENT ASSIGNEE(S): Japan Synthetic Rubber Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent

PRoberts

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04347162	A2	19921202	JP 1991-118559	19910523 <--

PRIORITY APPLN. INFO.: JP 1991-118559 19910523

AB A tissue adhesive contains (1) an oligopeptide containing ≥ 1 residue of glutamine and lysine and (2) collagen and/or gelatin. An oligopeptide with 18 amino acid residues in a chain in combination with an aqueous **collagen soln.** was effective in covering wounds in surgery.

L7 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:658275 HCAPLUS
DOCUMENT NUMBER: 117:258275
TITLE: **Collagen**-based **adhesives** and sealants for medical use and methods of preparation thereof
INVENTOR(S): Kelman, Charles D.; Devore, Dale P.
PATENT ASSIGNEE(S): Autogenesis Technologies, Inc., USA
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9213025	A1	19920806	WO 1992-US704	19920127 <--
W: BR, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
US 5219895	A	19930615	US 1991-646944	19910129 <--
CA 2101637	AA	19920730	CA 1992-2101637	19920127 <--
CA 2101637	C	20030819		
EP 569551	A1	19931118	EP 1992-907406	19920127 <--
EP 569551	B1	20021030		
R: CH, DE, FR, GB, IT, LI				
US 5874537	A	19990223	US 1996-610853	19960305 <--

PRIORITY APPLN. INFO.:

US 1991-646944	A	19910129
WO 1992-US704	W	19920127
US 1993-31665	A3	19930315
US 1994-321095	B1	19941007

AB Soluble or partially fibrillar **collagen** monomers in **soln.** are chemical modified, prior to polymerization, with an acylating agent, sulfonating agent or combination of both. The collagen compns. can be used as medical adhesives for bonding soft tissues or be made into a sealant film for a variety of medical uses such as wound closures, tendon wraps, or preventing adhesion formation following surgery. Pure acid soluble collagen (preparation is given) was reacted with anthraquinone-1,5-disulfonic acid and glutaric anhydride, and the modified collagen was separated Two sections of bovine corium was placed in the above modified **collagen soln.** in phosphate buffer and Na persulfate was added and exposed to UV irradiation for 30 s to bound two sections together which appeared to resist substantial forces.

PRoberts

L7 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:598599 HCAPLUS
DOCUMENT NUMBER: 117:198599
TITLE: A biologically derived medical **adhesive** containing **collagen** or gelatin and its uses
INVENTOR(S): Bowyer, Barry L.; Robin, Jeffrey; Terry, Richard N.; Garg, Atul K.
PATENT ASSIGNEE(S): Bausch and Lomb Inc., USA
SOURCE: PCT Int. Appl., 31 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9213578	A1	19920820	WO 1991-US9638	19911219 <--
W: AU, BB, BG, BR, CA, CS, FI, HU, JP, KP, KR, LK, MG, MW, NO, PL, RO, SD, SU				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
CA 2103728	AA	19920812	CA 1991-2103728	19911219 <--
AU 9212498	A1	19920907	AU 1992-12498	19911219 <--
AU 652808	B2	19940908		
EP 563331	A1	19931006	EP 1992-904917	19911219 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
NO 9302838	A	19930810	NO 1993-2838	19930810 <--

PRIORITY APPLN. INFO.: US 1991-653602 19910211
WO 1991-US9638 19911219

AB An adhesive composition suited for surgical applications comprises an aqueous **soln.** of **collagen** or gelatin which has a melt index temperature of 33-60° achieved by mixing blends of thermally crosslinked and non-crosslinked biopolymers. The adhesive also contains an antibiotic. A portion of 10% by weight porcine scleral collagen was dried and heated to 145° for 60 min to produce densely crosslinked material. A sec. portion was similarly treated for 15 min at 145° and served as a noncrosslinked sample. A mixture comprising 5% of noncrosslinked and 95% crosslinked material was diluted to various solid concns. (12.5, 15, 20, and 30% collagen) to obtain compns. with different bonding strengths.

L7 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:136326 HCAPLUS
DOCUMENT NUMBER: 116:136326
TITLE: A **collagen** medical **adhesive** and its uses
INVENTOR(S): Bowyer, Barry L.; Robin, Jeffrey
PATENT ASSIGNEE(S): Bausch and Lomb Inc., USA
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 466383	A1	19920115	EP 1991-306000	19910702 <--
R: DE, DK, ES, FR, GB, IT, SE				

PRoberts

JP 04231961	A2	19920820	JP 1991-164882	19910705 <--
AU 9180281	A1	19920109	AU 1991-80281	19910708 <--
AU 641254	B2	19930916		
NO 9102664	A	19920110	NO 1991-2664	19910708 <--

PRIORITY APPLN. INFO.: US 1990-549797 19900709

AB A medical adhesive useful in closing wounds and surgical incisions comprises an aqueous **soln.** of **collagen** which has a melt index of 35-45°. Crosslinked and noncrosslinked **collagens** are blended to provide an **adhesive** with a given viscosity, adhesiveness, melt index temperature, setting temperature and transparency. Thus, a portion of a 35 % **soln.** of naturally occurring **collagen** from a porcine sclera source was dried and heated to 145° for 60 min to produce densely crosslinked collagens and a second portion was similarly treated for 15 min at 145° to serve as a relatively noncrosslinked collagens. A mixture comprising 5 % of the noncrosslinked material and 95 % of the densely crosslinked material was made and diluted to obtain 12.5 % total collagen concentration Rabbit corneal tissue samples were successfully bonded using the composition

L7 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER:	1989:445213 HCAPLUS
DOCUMENT NUMBER:	111:45213
TITLE:	Osteoinductivity of carbonate apatite-collagen composites
AUTHOR(S):	Ohmae, H.; Okazaki, M.; Hino, T.
CORPORATE SOURCE:	Fac. Dent., Osaka Univ., Osaka, 565, Japan
SOURCE:	Jinko Zoki (**1989**), 18(1), 80-3 CODEN: JNZKA7; ISSN: 0300-0818
DOCUMENT TYPE:	Journal
LANGUAGE:	Japanese

AB CO3 apatites with chemical compns. and crystallog. properties similar to those of bone was mixed with 0.5 wt% **collagen soln.** The composites after 4 h-UV-irradiation, and incubation in 0.9% NaCl solution at 37° were less deformed than non-UV-irradiated samples, under a compressive force. The biocompatibility of the composites with surrounding tissues seemed to be good, in the periosteum cranii of rats and rabbits. The composites treated with fibrin glue in addition to the UV-irradiation kept their shape even after 1-mo-implantation. The newly synthesized bone-like substance was observed on the bone facing to the composite.

L7 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER:	1984:39652 HCAPLUS
DOCUMENT NUMBER:	100:39652
TITLE:	Tissue-adhering collagen wound dressing
INVENTOR(S):	Stemberger, Axel
PATENT ASSIGNEE(S):	Ruhland, Dr., Nachfolger G.m.b.H., Fed. Rep. Ger.
SOURCE:	Ger., 13 pp. CODEN: GWXXAW
DOCUMENT TYPE:	Patent
LANGUAGE:	German
FAMILY ACC. NUM. COUNT:	1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PRoberts

DE 3212412	A1	19831013	DE 1982-3212412	19820402 <--
DE 3212412	C2	19860102		
EP 90997	A2	19831012	EP 1983-102773	19830321 <--
EP 90997	A3	19851030		
EP 90997	B1	19891018		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
AT 47317	E	19891115	AT 1983-102773	19830321 <--
JP 58185162	A2	19831028	JP 1983-58557	19830402 <--
JP 02060339	B4	19901217		

PRIORITY APPLN. INFO.: DE 1982-3212412 19820402
EP 1983-102773 19830321

AB Wound coverings consist of a 0.3-2-cm-thick layer of collagen coated on 1 or both sides with a 0.2-2-mm-thick fibrinogen layer containing 0.5-10 mg/cm2. The fibrinogen contains SH groups derived from sulfhydration or reduction of disulfide bridges. The collagen is highly pure (N/hydroxyproline ratio by weight of <3). At least 1 of the layers may contain an antibiotic, antifibrinolytic, and/or thrombin [9002-04-4]. Collagen was prepared from beef tendons by extracting with pH 3.7 citrate buffer, dialyzing against 1% HOAc, incubating at 10° with pepsin at a collagen/pepsin ratio of 50:1, dialyzing against alkaline H2O at pH 8, centrifuging, dissolving in 1% HOAc, and dialyzing again until the N/hydroxyproline ratio was <3. A 1.5% **collagen soln**. was prepared in 0.05% HOAc, and 100 mL was poured in a 10 cm + 10 cm form and freeze-dried to give a sponge. Before formation of the sponge, 0.4 g tranexamic acid [1197-18-8], 80,000 units of aprotinin [9087-70-1] or 200 mg gentamycin sulfate [1405-41-0] may be added to the solution Fibrinogen was dissolved in isotonic saline and incubated at pH 10.6 and 0° for 35 min with N-acetylhomocysteine thiolactone; the reaction was stopped by addition of pH 7 phosphate buffer, and the SH-modified fibrinogen was desalted and concentrated by ultrafiltration.

The **soln**. was sprayed on the **collagen** sponge at 5 mg fibrinogen/cm2, and the sponge was freeze-dried and packaged. The collagen layer was 10 cm thick and the fibrinogen layer was .apprx.0.3 mm thick. Results with the use of the gentamycin-containing product in surgical wound healing and hemostasis are described.

L7 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1978:448854 HCAPLUS
DOCUMENT NUMBER: 89:48854
TITLE: Fibrinogen **concentrate** and **collagen** sponge as a tissue **adhesive**. Characterization of adhesion and the adhesive
AUTHOR(S): Stemberger, A.; Fritsche, H. M.; Bluemel, G.
CORPORATE SOURCE: Inst. Exp. Chir., Tech. Univ. Muenchen, Munich, Fed. Rep. Ger.
SOURCE: Medizinische Welt (**1978**), 29(17), 720-4
CODEN: MEWEAC; ISSN: 0025-8512
DOCUMENT TYPE: Journal
LANGUAGE: German

AB Fibrinkleber, a com. fibrinogen concentrate showed some decrease in the stability after freezing and thawing. Tachotop and Kollagenvlies Pentapharm, collagen sponges, stopped hemorrhaging, but not as well as native collagen. The tensile strengths of both wet and dry Kollagenvlies and Tachotop were less than that of aldehyde-crosslinked collagen sponge.

L7 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1972:512622 HCAPLUS
DOCUMENT NUMBER: 77:112622
TITLE: Effect of temperature, cooking time, and common salt

PRoberts

concentration on the solubility of **collagen** in pork muscle solubility of collagen in pork muscle
AUTHOR(S): Kopp, J.; Bonnet, Madeleine
CORPORATE SOURCE: Stn. Rech. Viande, Cent. Rech. Zootech. Veet., Theix/Saint-Genes-Champanelle, Fr.
SOURCE: Fleischwirtschaft (**1971**), 51(11), 1647-51
CODEN: FLEIA8; ISSN: 0015-363X
DOCUMENT TYPE: Journal
LANGUAGE: German

AB The epimysial collagen from longissimus dorsi of the pig was extracted and obtained without denaturation. The epimysia was solubilized in HOAc/NaOAc buffer by heating for 1, 3, 6, 10, or 16 hr at 45, 55, 65, and 75° with 0, 5, 10, 15, 20, and 25% NaCl. Hydroxyproline levels were determined and the distribution of different mol. wts. of the protein were found by gel electrophoresis. The solubility of the collagen was highest (80%) at pH 5.00 and 3 hr heating at 55° without NaCl. With 10-15% salt the temperature had to be raised to 65° to achieve the same solubility Above 15% NaCl concns. even raising the temperature could not produce the same solubility At low temps., the solubility increased with heating time but at temps. >65° there was no increase after 1 hr. As soon as the NaCl concentrate exceeded 15% the production of the polymers with mol. weight 300,000 dropped from 50% to low levels, e.g. 5% with 25% salt. Since ham is normally cooked at 65° and these polymers are essential in the renaturation of **collagen** to **cement** the meat together and make it firm, it is necessary for good consistency quality to control carefully the modern method of injecting salt. 22 refs.

L7 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1963:4102 HCAPLUS
DOCUMENT NUMBER: 58:4102
ORIGINAL REFERENCE NO.: 58:687f-h
TITLE: The products of dissolution of **collagen** in buffer **solutions**. II
AUTHOR(S): Shestakova, I. S.; Babloyan, O. O.; Romanov, Yu. A.
SOURCE: Nauchn. Tr. Mosk. Tekhnol. Inst. Legkoĭ Prom. (**1961**), (No. 19), 11-18
From: Ref. Zh., Khim. 1962, Abstr. No. 11P627.
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB cf. ibid. 3-10. A study was made of 9 variants of acid dissoln. of collagen. Untreated raw material was dissolved along with the hair and the epidermis and delimed skin obtained by a unique procedure for the production of leather for shoe soles was dissolved. Collagen was dissolved in buffer solns. at 60° and pH 4 and 2.2. The dissoln. products of collagen were analyzed before and after dialysis. Detns. were made of total N by the Kjeldahl method, of amino N by the Van Slyke method, of hydroxyproline, of dry residue, and of viscosity. Also, color reactions and pptns. with NaCl and EtOH were conducted, and films were obtained and tested. The best conditions for dissoln. of collagen are heating in buffer solns. at 60° for 20-4 hrs. (without draining at pH 4 and with draining at pH 2.2). These conditions may serve as a basis for the production of tech. gelatin and glue. It was possible to obtain these products directly from the raw material, to obtain films from undialyzed solns. of collagen and to use the solns. obtained for application of coatings to chrome-tanned leather dyed by a drum method and for obtaining fibrous material from solns. by precipitation with NaCl. The presence of hydroxyproline in several solns. indicates that coarse parts

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of the collagen structure rather than fine fragments go into solution
Greater destruction of the mol. chains of collagen takes place at pH 2.2
than at pH 4.

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John Sims EIC 3700 308-4836

PRoberts

ANSWER 9 OF 11 CONFSCI COPYRIGHT 2003 CSA on STN
AN 86:42042 CONFSCI
DN 86069827
TI **Collagen**-based calcified tissue **adhesive**
AU Kaleem, K.; Chertok, F.; Erhan, S.
CS Albert Einstein Med. Cent., Philadelphia, PA, USA
SO IADR, 1111 Fourteenth Street, N.W., Suite 1000, Washington, DC 20005 (USA), Abstract No. 1099.
Meeting Info.: 862 0206: International Association for Dental Research 64th Annual Meeting (8620206). The Hague (Netherlands). 26-28 Jun 1986. International Association for Dental Research (IADR).
DT Conference
FS DCCP
LA UNAVAILABLE
CC 3500 CLINICAL MEDICINE

PRoberts

ANSWER 1 OF 10 EMA COPYRIGHT 2003 CSA on STN
AN 2003(11):C4-Z-918 EMA
TI Evaluation of ligand binding to type 1 **collagen** through computational and analytical methods.
AU Vaidyanathan, J. (University of Medicine and Dentistry (New Jersey)); Vaidyanathan, T.K. (University of Medicine and); Ravichandran, S. (University of Medicine and Dentistry (New Jersey)); Klein, B. (University of Medicine and Dentistry (New Jersey))
SO Switzerland. 2003 Photomicrographs, Graphs, 15 ref.. p. 3061-3066 Conference: THERMEC 2003: International Conference on Processing & Manufacturing of Advanced Materials, Madrid, Spain, 7-11 Jul 2003
DT Conference Article; Journal
CY Switzerland
LA English
AB Type 1 **collagen** is a critical component of tissue architecture in the body. Molecular interactions involving **collagen** and **adhesives** used for tissue repair are of critical interest in biomaterials. This was approached using computational and analytical methods in this study. In the computational approach, energy optimized 3-D model structures of type 1 **collagen** and ligands were computer modeled and interactions of low energy conformations of ligands with a **collagen** receptor were evaluated by molecular mechanics computations using a 'random walk' model of the ligand within an interaction zone defined by a box around the static receptor. Binding assays were performed using an immunochemical method in which the binding interactions of a type 1 **collagen** antibody with the **collagen** structure were determined after prior exposure to a solvent containing no ligand (control) and predetermined **concentrations** of the ligand. In addition, modulated DSC scans were used to characterize differences in endotherms associated with potential **collagen**-ligand interactions. Visualization of low energy ligand-**collagen** complexes revealed that the cavities associated with the triple-helical folding of **collagen** fibril structure provided favored sites for effective ligand interaction. The primary interactions were those due to van der Waals forces with limited electrostatic contributions. Immunochemical binding assay revealed that prior exposure to ligand **solutions** reduced the extent of antibody binding to **collagen**. Endotherms of modulated DSC scans also revealed significant differences in the enthalpy associated with the breakdown of triple helix and hydration networks of **collagen** in the absence and presence of ligands. The computational and analytical results thus present a consistent picture of ligand mediated interaction effects.
CC Z Combined Coverage; C4 Chemical and Electrochemical Properties; Z-C4
CT Conference Paper; Journal Article; Binding; Computer simulation; Networks; Biomedical materials; Mathematical models; Assaying; Organic compounds; Surgical implants; Biocompatibility
ET D

=> d l23 all 2-10

L23 ANSWER 2 OF 10 EMA COPYRIGHT 2003 CSA on STN
AN 2003(7):C4-P-519 EMA
TI Comparative study of apatite formation on natural and synthetic polyamide in a mimicking **solution** to body fluid.
AU Inada, H. (Nara Advanced Institute of Science and Technology); Ohtsuki, C. (Nara Advanced Institute of Science and Technology); Miyazaki, T. (Nara Advanced Institute of Science and Technology); Ogata, S. (Nara

Advanced Institute of Science and Technology); Tanihara, M. (Nara Advanced Institute of Science and Technology)
SO Switzerland. 2003 Spectra, Diffraction Patterns, Photomicrographs, Numerical Data, 6 ref.. p. 15-18
Conference: Bioceramics 15: 15th International Symposium on Ceramics in Medicine at the Annual Meeting of the International Society for Ceramics in Medicine, Sydney, Australia, 4-8 Dec 2002
DT Conference Article
CY Switzerland
LA English
AB Natural bone is a kind of organic-inorganic hybrid composed of apatite and **collagen** fibers. Apatite-polymer hybrid is therefore expected to produce a novel material having both ability of bone-**bonding**, i.e. bioactivity, and mechanical properties analogous to natural bone. Biomimetic process has been paid much attention on fabrication of such hybrid, where bone-like apatite is deposited on polymer substrates in a simulated body fluid (SBF) with ion **concentrations** nearly equal to those of human extracellular fluid or more supersaturated fluids with respect to the apatite at ambient conditions. It has been revealed that carboxyl groups on organic polymer are effective for inducing heterogeneous nucleation of apatite in body environment. In the present study, apatite-forming ability of some natural polyamides, such as egg shell membrane and raw silk, and synthetic polyamide was examined in a **solution** mimicking body fluid. Apatite was formed on the raw silk after soaking in 1.5 SBF at pH 7.25 for 7 days, but not on egg shell membrane and synthetic polyamide, which have almost same contents or more of carboxyl groups compared to the raw silk. These results indicate that the apatite formation is governed not only by contents of carboxyl groups, but also by three-dimensional structure of the polyamides.
CC P Polymers; C4 Chemical and Electrochemical Properties; P-C4
CT Conference Paper; Polyamide resins; Surface properties; Fluids; Biocompatibility; Surface chemistry; Nucleation; Apatite; Substrates; Biomedical materials

L23 ANSWER 3 OF 10 EMA COPYRIGHT 2003 CSA on STN
AN 2003(7):D1-D-1346 EMA
TI Apatite formation on polyamide films containing sulfonic groups by biomimetic process.
AU Kawai, T. (Nara Advanced Institute of Science and Technology); Miyazaki, T. (Nara Advanced Institute of Science and Technology); Ohtsuki, C. (Nara Advanced Institute of Science and Technology); Tanihara, M. (Nara Advanced Institute of Science and Technology); Nakao, J. (Toyobo); Sakaguchi, Y. (Toyobo); Konagaya, S. (Toyobo)
SO Switzerland. 2003 Photomicrographs, Diffraction Patterns, 6 ref.. p. 59-62
Conference: Bioceramics 15: 15th International Symposium on Ceramics in Medicine at the Annual Meeting of the International Society for Ceramics in Medicine, Sydney, Australia, 4-8 Dec 2002
DT Conference Article
CY Switzerland
LA English
AB Fabrication of apatite-polymer hybrids have been attractive to produce novel bone-repairing materials with both bone-**bonding** ability, i.e. bioactivity, and mechanical properties analogous to natural bone, since natural bone is a kind of organic-inorganic hybrid, composed of **collagen** fiber and apatite crystals. We previously reported that apatite was deposited on polyamide films containing carboxyl groups in a **solution** mimicking body fluid, when they were incorporated with

calcium salts. To find alternative functional group effective on the apatite formation, in the present study we examined apatite-forming ability on polyamide films containing sulfonic groups in the same **solution**. It was found that the polyamide film containing sulfonic groups could deposit apatite on the surfaces in the **solution** when the film was incorporated with calcium salts. These results show that sulfonic group also acts as a functional group effective for apatite deposition in body environment as carboxyl group. (Biomimetic process.)

CC D Composites; D1 Raw Materials; D-D1

CT Conference Paper; Apatite; Films; Polyamide resins; Functional groups; Composite materials; Biomedical materials; Development

L23 ANSWER 4 OF 10 EMA COPYRIGHT 2003 CSA on STN

AN 2003(1):E6-Z-10 EMA

TI Effect of heat treatment on compressive strength and setting behavior of TTCP/DCPA-derived calcium phosphate **cement**.

AU Chen, W.C. (National Cheng Kung University); Ju, C.P. (National Cheng Kung University); Lin, J.H.C. (National Cheng Kung University)

SO Journal of Materials Science Letters (15 Oct. 2002) 21, (20) Diffraction Patterns, Graphs, 16 ref. p. 1583-1585
ISSN: 0261-8028

DT Journal

CY United States

LA English

AB As early as 1983, Brown and Chow indicated that mixtures of tetracalcium phosphate (TTCP) and di-calcium phosphate anhydrous (DCPA) powders in a diluted phosphate-containing **solution** led to the formation of hydroxyapatite (HA). According to this chemical reaction, a calcium phosphate **cement** (CPC) was first developed and patented in 1986. Thereafter, the use of this moldable CPC as bone substitute has attracted a great deal of attention and a variety of fabrication methods have been proposed. Different approaches have been reported to shorten the setting time of CPC. Examples include increasing the phosphate hardening **solution concentration**, using different hardening **solutions**, and mixing in calcium phosphate powders with such additives as HA, CaO, Na2O, P2O5, MgO, CaF2 and **collagen**. Nevertheless, these modifications are often accompanied by sacrifices in biocompatibility and/or mechanical strength. The present work is an attempt to provide a simple heat treatment method that can modify the working/setting time of TTCP/DCPA-derived CPC without using additives or sacrificing its strength.

CC Z Combined Coverage; E6 Heat Treatment; Z-E6

CT Journal Article; Biomedical materials: Development; Bone **cements**; Calcium phosphate; Setting (hardening); Heat treatment; Compressive strength; Biocompatibility

ET Ca*O; CaO; Ca cp; cp; O cp; Na*O; Na2O; Na cp; O*P; P2O5; P cp; Mg*O; MgO; Mg cp; Ca*F; CaF2; F cp

L23 ANSWER 5 OF 10 EMA COPYRIGHT 2003 CSA on STN

AN 2003(1):E7-C-134 EMA

TI The interactions of bisphosphonates in **solution** and as coatings on hydroxyapatite with osteoblasts.

AU Ganguli, A. (University of Strathclyde); Henderson, C. (University of Strathclyde); Grant, M.H. (University of Strathclyde); Meikle, S.T. (University of Brighton); Lloyd, A.W. (University of Brighton); Goldie I. (Royal Academy of Medicine (Sweden))

SO Journal of Materials Science: Materials in Medicine (Oct. 2002) 13, (10) Spectra, Graphs, Photomicrographs, 24 ref. p. 923-931

PRoberts

ISSN: 0957-4530
DT Journal
CY United States
LA English
AB Aseptic loosening is one of the major causes of failure of artificial hip joints, and it can occur for several reasons, including osteolysis of the bone tissue in response to stress shielding or cellular reactions to wear debris. Any treatment of the prosthesis which could minimize the osteolytic response of bone tissue may be able to extend the life-time of the implant. Bisphosphonates are potent inhibitors of osteoclastic bone resorption, and they bind avidly to hydroxyapatite (HA). Coating the prostheses with bisphosphonates may therefore inhibit osteolysis. We have investigated the potential for this approach by determining whether bisphosphonates interact with osteoblasts in vitro. The effects of pamidronate (P), clodronate (C), and etidronate (E) in **solution** and when coated onto HA were investigated. P inhibited protein and **collagen** syntheses potently when in **solution**, but not after being bound to HA. When bound to HA, both P and C increased DNA, protein and **collagen** syntheses of osteoblasts and may encourage the osseointegration of implants. The pharmacological effects of the bisphosphonates studied altered dramatically after binding to HA. This must be fully investigated before this approach to prolonging prostheses stability can be evaluated.
CC C Ceramics; E7 Surface Finishing; C-E7
CT Journal Article; Hydroxyapatite; Surgical implants; Prosthetics; Protective coatings; Binders (**adhesives**); Inhibitors
ET P; C

L23 ANSWER 6 OF 10 EMA COPYRIGHT 2003 CSA on STN
AN 2002(9):C4-D-447 EMA
TI In vivo estimation of calcium phosphate **cements** containing chondroitin sulfate in subcutis.
AU Yoshikawa, M. (Osaka Dental University); Hayami, S. (Osaka Dental University); Toda, T. (Osaka Dental University)
SO Switzerland. 2002 Photomicrographs, Diffraction Patterns, 23 ref.. p. 135-141
Conference: International Conference on Materials for Advanced Technologies: Symposium B: Biomaterials and Tissue Engineering., Singapore, Singapore, 1-6 July 2001
DT Conference Article
CY Switzerland
LA English
AB Calcium phosphate **cements** using an equimolar mixture of tetracalcium phosphate and dicalcium phosphate dihydrate (TeDCPD) for the powder phase were experimentally developed for use in endodontic treatment. The fundamental **cement** is composed of TeDCPD kneaded with modified McIlvain's buffer **solution** containing calboxymethyl cellulose sodium salt (CEM-1). In the liquid phase of the modified one (CEM-2), chondroitin sulfate (CS) was added in place of the salt. The final **concentration** of CS in CEM-2 is 1%. Another one (CEM-3) contained 2% CS finally in place of the salt. X-ray diffract meter (XRD) was used to examine the crystalline phases of the **cements**. The tissue compatibility of the **cements** was examined histologically in the subcutaneous tissue using rats. The XRD results showed no dibasic calcium phosphate phase to be traced in CS containing two **cements** after 1 day of kneading. There were more multinucleated giant cells appearing around CEM-1 than around CEM-2 or CEM-3 after 4 weeks. Fibroblasts, **collagen** fibers and small vessels infiltrated into the internal porous structure of CEM-3.

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Excluding CEM-3, two **cements** were encapsulated with a dense fibrous connective tissue layer. We conclude that CS, in the experimentally developed **cement**, contributed to biocompatibility and bioactivity of the **cement**.

CC D Composites; C4 Chemical and Electrochemical Properties; D-C4

CT Conference Paper; Bone **cements**: Surface properties; Surface chemistry: Biological effects; Biocompatibility; In vivo tests; Biomedical materials: Materials selection

ET C*D*P*Te; TeDCPD; Te cp; cp; D cp; C cp; P cp; C*S; CS; S cp

L23 ANSWER 7 OF 10 EMA COPYRIGHT 2003 CSA on STN

AN 2002(9):C4-D-423 EMA

TI Modification of biocement D-**collagen** I-composites with osteocalcin.

AU Reinstorf, A. (Technische Universitat Dresden); Knepper-Nicolai, B. (Technische Universitat Dresden); Hempel, U. (Institut fur Physiologische Chemie); Wenz, R. (Merck); Pompe, W. (Technische Universitat Dresden)

SO ISTEC-CNR, Via Granarolo n. 64, Faenza, 48018, Italy. 2002 Photomicrographs, Graphs, 17 ref.. p. 131-136
Conference: 7th Meeting and Seminar on: Ceramics, Cells and Tissues, Faenza, Italy, 13-15 June 2001

DT Conference Article

CY Italy

LA English

AB In order to generate a calcium-phosphate bone **cement** as a transient replacement for bone defects, Biocement D (Merck Biomaterial GmbH) containing mineralised **collagen** [1] was modified with osteocalcin. It was added to the **cement** paste during setting in order to control the crystallization kinetics of hydroxyapatite (HAP) as well as to stimulate the interactions between bone cells and between cells and the bone replacement material. Analysis by SEM shows, that osteocalcin causes a nanosize micro-structure of the **cement**. That can be explained by inhibited growth of HAP crystals. Mechanical measurements of compressive strength show a decrease by incorporation of osteocalcin, pointing onto a higher defect **concentration** of the crystalline structure. The influence of osteocalcin onto the interaction of bone cells with Biocement D-**Collagen** I-Composites was studied in a cell culture system using the human osteosarcoma cell line SAOS-2. Results suggest, that osteocalcin might improve the initial adherence of osteoblast-like cells.

CC D Composites; C4 Chemical and Electrochemical Properties; D-C4

CT Conference Paper; Bone **cements**: Surface properties; Hydroxyapatite: Composite materials; Organic compounds: Composite materials; Surface chemistry: Biological effects; Biocompatibility; Crystallization; Compressive strength; Biomedical materials: Materials selection

ET D; I

L23 ANSWER 8 OF 10 EMA COPYRIGHT 2003 CSA on STN

AN 2001(6):C1-D-1947 EMA

TI Hydroxyapatite-based materials for replacement of bone in load bearing situations.

AU Milthorpe, B. (University of New South Wales)

SO National University of Singapore, 30 Lower Kent Ridge Crescent, 119075, Singapore. 2000 Numerical Data, 22 ref.. p. 38-39
Conference: Tenth International Conference on Biomedical Engineering, , Singapore, 6-9 Dec. 2000

DT Conference Article

CY Singapore

PRoberts

LA English
AB The majority of the compressive, tensile and torsional stresses borne by structural bone are taken by the cortical (or compact) bone. Bone replacement requires the quickest possible restoration of adequate strength on all three modes of loading. Calcium phosphate based materials generally show excellent bone compatibility and apposition with 'biological' **bonding** between the material and the healing bone. These materials, however, have poor fracture toughness and a relatively high elastic modulus compared to cortical bone and may also be weak in porous forms. **Solutions** to these problems have been many and varied. Hydroxyapatite (HAp) has been used as a coating material where, hopefully, the stresses are mostly in shear or compression. HAp and bioglass particles have been included as bio-active fillers in a variety of matrices including polyethylene; poly-lactide/glycolide and **collagen**: The other major strategy has been to reinforce the HAp matrix with fibres, or ceramic particles.
CC D Composites; C1 Mechanical Properties; D-C1
CT Conference Paper; Particulate composites: Mechanical properties; Polyethylenes: Composite materials; Hydroxyapatite: Composite materials; Glass ceramics: Composite materials; Compressive strength; Shear strength; Loading

L23 ANSWER 9 OF 10 EMA COPYRIGHT 2003 CSA on STN
AN 1999(10):A2-D-491 EMA
TI Pore and structure formation in collage-hydroxyapatite precursors: Experiment-model.
AU Lampenscherf, S. (Technische Universitat Dresden); Weis, K. (Technische Universitat Dresden); Pompe, W. (Technische Universitat Dresden)
SO Switzerland. 1999 Graphs, Photomicrographs, 9 ref.. p. 362-367 Conference: Functionally Graded Materials 1998, Dresden, Germany, 26-29 Oct. 1998
DT Conference Article
CY Switzerland
LA English
AB In this paper we discuss different routes for the formation of **collagen**/HAP-composites with graded porosity. We show experimental evidence of the pore growth during phase separation of an aqueous **collagen solution** and investigate the influence of different mechanical boundary conditions (freestanding body, film on rigid substrate). The formation of a graded pore structure via phase separation is presented as well as the successful synthesis of a **collagen**/HAP-composite via a **cementation** reaction from a colloidal HAP-precursor. In the modelling part we focus on the drying process as a route for graded densification and structure formation. We present a brief description of the model used to investigate stress formation and plastic deformation in a two-phase material containing a liquid and a solid phase. We outline the important processing and material parameters for structural design and show how the model can be used to find the optimum processing conditions for a desired graded structure.
CC D Composites; A2 Microstructure; D-A2
CT Conference Paper; Hydroxyapatite: Composite materials; Functionally gradient materials: Microstructure; Pore formation; Porosity; Phase separation

L23 ANSWER 10 OF 10 EMA COPYRIGHT 2003 CSA on STN
AN 1994(7):D2-C-1031 EMA
TI A New Bioglass Ceramic.
AU Arif I. (Punjab University)

John Sims EIC 3700 308-4836

PRoberts

SO Dr. A.Q. Khan Research Laboratories, Kahuta, P.O. Box 502, Rawalpindi, Pakistan. 1994 Photomicrographs, Diffraction Patterns, 15 ref.. p. 127-132
Conference: Advanced Materials-93, Islamabad, Pakistan, 20-24 Sept. 1993
See also AN: 94(7):G2-Z-175

DT Conference Article

CY Pakistan

LA English

AB Since the discovery of Bioglass by Hench et al ., various kinds of glasses and glass-ceramics have been discovered to bond to living bone. Their mechanical properties, of course, have not been very good. Therefore, their applications have been limited to low load-bearing parts. The natural bone is a composite of small spastite particles reinforced by **collagen**. A new bioglass-ceramic: MgO-CaO-P sub 2 O sub 5 -SiO sub 2 -TiO sub 2 B sub 2 O sub 3 -Na sub 2 O-ZrO sub 2 -CaF sub 2 of improved mechanical and other properties has been developed. Optical microscopy revealed uniform crystals of 25 mu m size. In addition, a bioactive bone **cement** based on CaO-SiO sub 2 -P sub 2 O sub 5 glass powder in ammonium phosphate **solution** has also been developed. The **cement** dried within a few minutes after application and formed a strong bond with the natural living bone. The dog tibia tests of the glass-ceramic and the bioactive **cement** showed that the materials were biocompatible and the biocement formed strong chemical bond with the living bone.

CC C Ceramics; D2 Materials Development; C-D2

CT Conference Paper; Glass ceramics: Development; Biocompatibility; Surgical implants: Materials selection; Triclinic lattice

ET Ca*Mg*O*P; Ca sy 4; sy 4; Mg sy 4; O sy 4; P sy 4; MgO; Mg cp; cp; O cp; CaO; Ca cp; MgO-CaO-P; O; O*Si; SiO; Si cp; O*Ti; TiO; Ti cp; Na; O*Zr; ZrO; Zr cp; O-ZrO; Ca*F; CaF; F cp; Ca*O*Si; Ca sy 3; sy 3; O sy 3; Si sy 3; CaO-SiO; P

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John Sims EIC 3700 308-4836